

- Fig. 4. *Lethe dinarbas*, Hewitson, ♀.
 5. *Papilio glycerion*, Gray, ♂, underside.
 6. „ *paphus*, n. sp., ♂, underside.
 7. *Abisara chela*, n. sp., ♂, upperside.
 8. „ *neophron*, Hewitson, ♂, upperside.
 9. *Neptis burmana*, n. sp., ♂.
 10. *Pamphila avanti*, n. sp., ♂.
 11. *Allotinus multistrigatus*, n. sp., ♂.
 12. *Nephis kuhara*, n. sp., ♂.
 13. *Lethe brisanda*, n. sp., ♀.
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XIII.—Additional Notes on new or rare Indian Butterflies.—By WILLIAM DOHERTY, Cincinnati, U. S. A. Communicated by the NATURAL HISTORY SECRETARY.

[Received April 23rd ;—Read June 2nd, 1886.]

Family DANAIDÆ.

1. EUPLÆA (TREPSICHOIS) KALINGA, n. sp.

♂. Differs from the male of *midamus*, Linn. (*linnæi*, Moore), only in the less brilliant blue of the forewing, with its spots larger and more distinctly white; and in the smaller male patch of the hindwing, extending neither to the apex of the cell nor to the lower median branch. ♀. Almost indistinguishable from the male, except in the absence of the male patch and the presence of a line of obscure whitish submarginal dots on the hindwing. A few paler streaks are usually visible on the disc of the hindwing subapically, but the cell is in all my specimens immaculate, a character in which it differs from all its allies.

I found this butterfly common on Mahendragiri and other mountains of the Ganjam District and in the Potingi Pass and the neighbouring country in the Vizagaptam district, Madras Presidency, and in the adjoining native state of Jaipur. I also saw a specimen flying in Orissa, near the southern boundary of that province. It probably represents *midamus* throughout the main line of the Eastern Ghâts from the Godâvari to the Mahânadi.

2. EUPLÆA (TREPSICHOIS) MIDAMUS, Linn.

One female taken by me in the Nicobars, on the island of Bompoka or Pâbat, the most beautiful of that beautiful cluster of islands.

3. *DANAIS* (TIRUMALA) *GAUTAMOIDES*, n. sp.

♂, ♀. Differs from *gautama*, Moore (Arakan, Chittagong, and Tenasserim), in the whiter hyaline markings, all obscurely edged with dark on the underside, and in the deeper brown of the underside. The hyaline mark at the base of the cell of the forewing is bifid as in *gautama*, but the upper branch is the shortest, and is remote from the mark at the end of the cell, the latter being shaped as in *septentrionis*, but less oblique. The cell of the hindwing is usually cleft in three parts by slender black lines. Expanse 82 millimetres.

Apparently an insular representative of *gautama*; somewhat transitional to *limniace*. Common in the Southern Nicobars—Great and Little Nicobar and Kondul. It seems to be mimicked by *Radena nicobarica*, Wood-Mason and de Nicéville, which I have often taken in company with it. The closely allied *limniace* is common in Kar Nicobar, Teressa, Bompoka, Camorta, and Nancowry, but I have never found it in the southern islands of the group, where *gautamoides* abounds.

Family SATYRIDÆ.

4. *MYCALESIS* (VIRAPA) *MANI*, n. sp.

♀. Fuscous, white band of the forewing wider than in any allied species, and almost crossing the apex. Hindwing unmarked except by two submarginal lines obscurely darker. *Below* paler brown, a broad dull violet band across disc of hindwing, unmarked with white, its inner border nearly straight. This band is obscurely visible on the lower part of the forewing, not extending to the white band, below the white band one large ocellus, above it two apical ocelli set obliquely, the upper many times the larger, the ochreous rings of the two confluent. *Hindwing* with seven ocelli, the fourth blurred, the third smallest, the fifth as large as all the others united. Margin with an ochreous brown, and an obscure violet line bordered by dark lines. Cilia dark. The absence of the ocellus on the forewing above, and the violet band of the underside unmarked with white distinguish *mani* from the female of the Andamanese *radza*. From the female of the wet-season brood of *anaxias* (India) it differs on the underside in the uniform paler and more ochreous brown of the base; in the great breadth of the white band which extends almost to the end of the cell; in the very unequal ocelli, in the absence of the lilac gloss discally and submarginally; and in the darker apex, and obsolescent discal band of the forewing. Expanse 57 millimetres.

One female, Gonyi, Great Nicobar; two females, Ikuya, Little Nicobar; male not taken.

But for the differences in the venation I should have supposed *manii* identical with *anaxioides*, Marshall. I name this species for Mr. E. H. Man, Superintendent of the Nicobars, to whose kindness I owe the exceptional facilities which I enjoyed for visiting the islands under his charge.

Family APATURIDÆ.

Subfamily KALLIMINÆ.

5. DOLESCHALLIA POLIBETE, Cramer.

Kar Nicobar not common, probably an immigrant from the Andamans.

Subfamily ARGYNNINÆ.

6. CIRRHOCROA NICOBARICA, Wood-Mason and de Nicéville.

♀. Differs from male in being duskier basally on the hindwing within the continuous discal black striga. Below paler, more ochreous, less ferruginous, more tinged with blackish, all the marks more distinct, the discal pale band of the hindwing wider, that of the forewing obscurely visible, very wide, bordered inwardly, and at the lower end outwardly, by a distinct reddish fascia, the submarginal fasciæ of the forewing more distinct than in the male, and the bent blackish line apically on the costa of the male absent. Great and Little Nicobar.

Subfamily APATURINÆ.

7. CYRESTIS TABULA, de Nicéville.

♀. Differs from the male in being white below instead of pale orange-ochreous; above it is only slightly tinged with ferruginous, and is somewhat like *thyodamas* except that the lighter spaces are heavily clouded with gray. When flying it more resembles the white Indian species *thyodamas* for which I at first mistook it. The male of the same species. Great Nicobar.

8. APATURA (or HYPOLIMNAS) MISIPPUS, Linn.

A male from Mount Harriet, near Port Blair, Andaman Islands. I have both sexes from Kar Nicobar, the female being as usual a mimic of *Danaïs chrysippus*.

YOMA, n. gen.

Resembles *Eurhinia*, Felder (*Rhinopalpa*) in the shape of its wings, and has the costa of the forewing similarly indented at the base. The hindwing, however, has but one lobe at the anal angle (two in *Eurhinia*), and is tailed at the upper median instead of the radial vein; its abdominal margin is less excavated. The outer border of both wings is straighter, and the forewing is not produced at the end of the lower median. Unlike *Eurhinia* the cell is closed in both wings; the

first subcostal of the *forewing* is given off at one-sixth before the end of the cell, the second at two-thirds thence to the end of the cell, the third (which extends to the costa) at more than one-third between the cell and the apex, opposite the end of the first subcostal; the fourth and fifth bifurcate halfway thence to the apex. Upper disco-cellular distinct, very short, middle strongly angled inwardly, one-third above its lower end, lower slender, slightly concave, half again as long as the upper, reaches the median just beyond its last bifurcation. *Hindwing* with the præcostal vein slightly bifid, the cell closed by a slender vein somewhat bent inwardly, joining the costa considerably *before* the separation of its two upper branches. The radial is more curved than in *Eurhinia*, the internal short, = less than half the abdominal margin. The antennæ are slender and have about 51 joints, of which the club, which is small and cylindrical, has fourteen. The palpi are long and raised above the head, the last joint long and straight. The feet seem to have four claws.

The genus is rather close to *Apatura* (*Hypolimnias*), but the forewing is sharply angled at the end of the fifth subcostal, and the hindwing at the upper median branch. The disco-cellulars of both wings are very different from those of *Apatura*, and the forewing is indented at the base of the costa (as in *Eurhinia* and *Grapta*). The disco-cellulars also distinguish it from *Dichorrhagia*, which in venation comes nearest to it among Indian butterflies. From *Vanessa* and allied genera it differs in the short, broad cell of the forewing, with its deep, acute upper angle more remote from the base than the lower one.

As I have never seen *sabina*, I take *vasuki* for the type of the genus.

9. YOMA VASUKI, n. sp.

♂, ♀. Deep fuscous above with two obscure darker submarginal lines. Cilia whitish, anal angle irrorated with gray, obscure darker lines across the cell above and below. A broad band of pale reddish-ochreous crosses both wings discally, somewhat bent inwardly near the costa of the forewing, where it is cut by the dark subcostal vein. A series of three apical ochreous spots, the middle one distinct, the outer ones small and obscure. Two small white spots on the outer disc between the middle median and the lower radial, present in both sexes. On the hindwing, unlike *sabina*, the band is immaculate and narrows greatly in its lower portion, not approaching the abdominal margin. An obscure ocellus visible in some specimens on the hindwing outside of the band. *Below* the butterfly resembles a dry leaf; the prevailing colour is ashy gray with a faint silky gloss; the band of the upperside is faintly visible through the wing as a paler fascia, the two white dots more distinct, forming part of a discal line of black dots set in reddish irides, obscurely visible on both wings though

obsolescent on the forewing; near the lower angle of which it includes a distinct and much larger black spot. Except in the breadth of the wings the sexes do not differ.

Egg very nearly as high as wide, spherical, slightly flattened above and below, shining green, with eleven or twelve slender radiating ribs meeting above.

Seen from the side, uncus strongly bent downwards, slender, with two very broad moveable wings, clasps deeply bifid.

I found it flying rather commonly in the open country at the foot of the Arakan Yoma near Sandoway, Arakan. It has the habits of *Apatura* (*Hypolimnas*) *misippus*. There are specimens (males only) in Major Marshall's collection and in that of the Indian Museum, labelled "Rangoon."

The allied *sabina*, Cramer, from Amboyna and Java, has according to Cramer and Godart the white discal spots of the forewing present only in the female. The ochreous band is very broad in both sexes, extending according to Godart, to the anal angle, and is marked with one or two black discal spots.

10. EURIPUS CONSIMILIS, West.

A male and a female, 5,000 feet, Potingi Peak, Eastern Ghâts, in the Vizagapatam District. They differ considerably from Himalayan specimens, and are perhaps somewhat transitional to the rare *meridionalis* from Travancore.

Family NYMPHALIDÆ.

11. PARTHENOS LILACINUS, Butler.

Great Nicobar, scarce.

Family LYCÆNIDÆ.

Subfamily THECLINÆ.

12. MYRINA (PURLISA ?) DONINA, Hew.

Sirtai Mountain, Lushai country, near the frontier of the Chittagong Hill Tracts, rare.

13. BIDUANDA LAPITHIS, Hew.

Barakhal, Chittagong Hill Tracts. My specimens do not agree very well with Hewitson's and Distant's figures and descriptions of Malaccan specimens.

Subfamily DEUDORIGINÆ.

14. DEUDORIX BARTHEMA, Distant.

Dimagiri and Barakhal, Chittagong Hill Tracts. The yellow colour of the underside of the female, which is not uncommon in the Chittagong

Hill Tracts, varies greatly in different specimens. I suspect that the male will be found to be of the usual dull rufous hue of below, characteristic of the group, and will perhaps be difficult to distinguish from some well-known species.

Subfamily LYCENINÆ.

15. *CASTALIUS MANLUENA*, Felder.

Allied to *roxus*. ♂. Black, tip of tails white, and a slender marginal white line on hindwing, broken at the veins. Both wings with a broad white discal band, extending on the forewing from the hind-margin to above the lower radial, just entering the cell, at the end of which it is strongly indented from above; prolonged outwardly between the upper medians. On the hindwing it is broad, strongly produced outwardly, acutely indented inwardly. *Below, forewing*, ground white, base dark with a white longitudinal line close to the costa: a black mass extending obliquely from the base and the hind margin to the middle of the costa, where it joins a broad black subapical area which extends thence to the middle median branch, there it is connected (slightly) with the broad submarginal dark band, and with an outer discal dark area lying between the upper median and the hind-margin. *Hindwing* with a basal black mass untouched with white, and a discal band, irregular but unbroken, crossing the wing, and a submarginal line of wide, joined black lunules uniting at the apex with the discal band. Expanse 26 millimetres.

A male taken by me at Ikuya, Little Nicobar. The prehensores are quite distinct from those of the next species. The species is without metallic markings either above or below. Felder's female, with which this male seems conspecific, is as he remarks distinguished from *roxus* and allied species by the absence of all white at the base of the costa of the hindwing below. This also distinguishes it from *airavati*. The unbroken transverse discal band of the hindwing distinguishes the two Nicobarese species from all others. The female has, according to Felder, white marginal spots on both (?) wings above.

16. *CASTALIUS AIRAVATI*, n. sp.

♂. Allied to *ethion*. *Above*, light, shining blue, the outer borders of both wings broadly, and the costa of the forewing narrowly black. A white band crosses both wings. On the forewing its upper part is wide, centering between the upper median and the lower radial branches; thence to the hind margin it is slender and almost obsolescent; on the hindwing it is narrow and angular. *Below*, ground ochreous-white (white in *ethion*), pure white on the lower part of the forewing. It differs from *ethion* below in the increased size of all the black markings. The transverse discal band across the hindwing, though irregular, is continuous;

on the hindwing its two parts are very close together; the upper one is widely united near the costa, with the outer of the two oblique basal stripes. The latter are united in both wings, enclosing a narrow white band. The two lines of submarginal spots are less equal and regular than in *ethion*, the inner being very large and forming an almost continuous and very heavy lunular line. The anal and subanal black spots are edged with silvery blue. Tails shorter than in *manluena*. Expanse 32 millimetres.

Two males, Gonyi, Great Nicobar.

Family PIERIDÆ.

17. NYCHITONA XIPHIA, Fab., var. NICOBARICA.

My numerous specimens from Great and Little Nicobar all have the black margin of the apex much narrower than in the typical *xiphia*, and the discal spot greatly reduced, and almost obsolescent. The genus does not seem to occur in any of the northern islands of the group.

18. DELIAS KANDHA, n. sp.

♂, ♀. A local form of *thisbe*, Cramer. Allied to *pyramus*, Wallace, from Sikkim. In *kandha* the ochreous anal area of the hindwing above is replaced by pale cream; the light discal areas on the hindwing below, which in *pyramus* are ochreous anally and whitish apically, are in *kandha* of an almost uniform bright yellow hue, inclining to lemon; the ochre spot at the base of the costa of the hindwing below is much larger and more distinct; the apical grey streaks of the forewing above are obscurely tinged with ochreous. All the pale marks are larger, and the black areas smaller and better defined. The female hardly differs from the male. Four males and three females taken on the Potingi Pass in the Vizagapatam District, Madras Presidency and the adjoining Jaipur State, at from 3,000 to 5,000 feet elevation on the Eastern Ghâts. Expanse 98 millimetres.

19. DELIAS ETHIRE, n. sp.

♂, ♀. A local form of *hierte*, Hüb. The male closely resembles *Delias hierte*, var. *indica*, Wallace (Assam to Upper Tenasserim). It is a whiter insect, the apex being but slightly clouded with gray, the subapical band distinctly marked being gray, with the spaces beyond it partly of almost pure white. The cell of the forewing is white above and hardly touched with gray below, the upper two or three apical pale spaces tinged with yellowish. Hindwing immaculate except for the gray terminations of two or three of the veins. The scarlet spots of the hindwing below are transmitted through the wing as a pink band. Below, the disc, base and abdominal margin of the hindwing are bright lemon yellow, becoming whitish outwardly

on the disc, the scarlet submarginal band is rather narrow and even. ♀. Like the male, and has little resemblance to the female of *hierte*; it is white, all the veins accented with black, the extreme apex and the subapical band of the forewing dark gray, leaving a whitish band tinged with ochreous across the apex. *Below*, the female is like the male, the apex of the forewing is more distinctly marked with lemon-yellow, and the veins and subapical band are darker, the cell marked with perceptible gray lines. The brilliant lemon and scarlet hues of the hindwing are transmitted through the wing appearing above as creamy and pink. The two lower disco-cellulars of the forewing are less oblique and more angled outwardly than in *hierte*, resembling those of *eucharis*. Expanse 98 millimetres.

Common in the Vizagapatam District, Madras Presidency (at Bobbili, Parvatipuram, the Potengi Ghát, etc.), and in the Jaipur State, probably extending to the Godávári; scarce in the Ganjam District (Mahendragiri); also seen in Southern Orissa, where it is probably rare. From *eucharis*, in company with which I have often taken it, it is easily distinguished by the absence of the dark submarginal band on the hindwing above and below.

Family PAPILIONIDÆ.

20. PAPILIO DOUBLEDALII, var. SAMBILANGA.

Intermediate between *doubledalii*, Wallace (India and Malacca), and *rhodifer*, Butler (Andamans). The tail is black as in *doubledalii*. Of the discal semicircle of whitish spots on the hindwing, that on the abdominal margin is very short; those between the middle median and the radial are generally absent above and quite rudimentary below. The anal orange spot is large, the marginal one at the end of the middle median is joined with the submarginal one between the two upper medians, both above and below (very much as in *rhodifer*). The female is similar, but the wings are wider and the tails much shorter and broader.

Great Nicobar, rather common.

Family HESPERIADÆ.

21. ERIONOTA (?) LALITA, n. sp.

♂. Above light but very bright ferruginous, slightly paler outwardly, marked with translucent ochreous spots set in black rings. On the *forewing*, one large triangular spot near the end of the cell, another larger and quadrate below it between the lower median branches, a third, much smaller and rounded, slightly beyond them between the upper medians. Below these, two minute ones with the translucent pupil obsolescent, set obliquely in the internommedian

space; also five subapical ones, small, well-separated, the third and fourth furthest from the base, the third largest, the fourth and fifth minute. *Hindwing* with a transverse black spot at the end of the cell, and a semicircle of eight smaller ones on the disc round it, of which only one or two are pupilled with hyaline: the first, which is placed basally between the costal and subcostal veins, is obscure. *Below* duller ferruginous, the markings similar, the black rings of the spots of the forewing less distinct. Body densely clad with rust-red fur, eyes scarlet. Expanse sixty millimetres. ♀ unknown, probably very similar.

I caught two males, of which I unluckily have but one before me, on Sirtai Mountain (2,000 feet), in the Lushai country, north-east of Chittagong and south of Cachar.

The type of *Erionota* is *thraæ*, but Mabille includes *irava* in the genus. On account of its possible affinity with that species (which I have never seen), I put this rare butterfly under the head of *Erionota*. It seems, however, to bear more resemblance to Felder's species of *Chetocneme* and *Netrocoryne* from the Australian and Austro-Malayan region. The following details of the structure of *lalita* will perhaps be useful to that bold man who may some day be found to undertake to systematize the *Hesperiadæ*.

Costal margin of *forewing* slightly convex, apex acute, outer and hind margins straight or a trifle convex. Costal margin of *hindwing* replicate, very convex basally, apex distinct, outer margin rounded, abdominal margin convex with a deep abdominal fold. Cell two-thirds of the length of the *forewing*, costal vein ends just before the end of the cell, first subcostal originates at nearly one-third before the end of the cell, then at decreasing intervals come the second, third, fourth (which extends to the apex) and fifth, upper radial from end of cell, disco-cellulars oblique, hardly angled, the lower longest. *Hindwing*, costal vein extends to apex, cell broad, quadrate, half as long as the wing, longest from base to its lower angle, disco-cellulars somewhat sinuate, upper two-thirds as long as the lower, or as the distance between the bifurcation of the subcostals and the end of the cell. Lower disco-cellular meets the median just beyond its last bifurcation.

Antennæ of about fifty-five joints, the club consisting of twenty-nine joints, is bent at a right angle, and tapers to a slender point. *Palpi* densely hairy, penultimate joint very thick and rounded, concave on both sides, last joint projecting forward, minute, blunt, one-fifth as long as the preceding one, in which it is more or less concealed. The *feet* each bear two long hairs, two claws, and two pubescent cushions or *pulvilli*. The front tibiae are slightly swollen, with a very short spur in the middle, the middle tibiae have two very long and unequal spurs

at the lower end. The hind tibiæ are clothed with very long dark brown appressed scales (not hairs). At their end a pair of spines, and also two singular follicular appendages resembling the husk of oats, acicular, scaly, hollow, dark-brown, membranous, loosely attached, and about two millimetres in length. On the middle of the tibia is a single somewhat longer spine with an accompanying follicle.

XIV.—On two new species of *Ilex* from the Eastern Himalaya.—By
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Botanic Garden, Calcutta.

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(With Plates XIII. & XIV.)

Both the species described below fall into the section of the genus *Ilex* which is characterised by having the flowers in very dense short axillary branched cymes, and with the fruit never more than 4-celled.

ILEX SIKKIMENSIS, King. A glabrous evergreen diœcious tree 30 to 50 feet high, the young branches rather stout, their terminal buds covered by numerous large imbricated broadly-ovate blunt puberulous bracts, their bark pale yellowish; leaves thinly coriaceous, 5 to 7 inches long, narrowly elliptic-oblong or oblanceolate, the apex acute, the edges finely serrate, the midrib very prominent, primary lateral nerves 10 to 12 pairs, distinct but not prominent; flowers in shortly pedunculate glomeruli from the axils of the older leaves, bracts broadly acute, each bract with a 3-flowered, 2 to 3-bracteolate, cyme in its axil; flowers of both sexes pedicillate 4-merous, the sepals ovate blunt, the petals broadly ovate connected by their bases; stamens in the male flowers about as long as the petals, the anthers broadly ovate, in the female flower absent; ovary, absent in the male flowers, in the female 4-celled with 1 ovule from the inner upper corner of each cell; ripe fruit globose, 2 in. in diam., yellow, succulent, crowned by the remains of the quadrate stigma; pyrenes 4, trigonous, grooved, each 1-celled and 1-seeded.

Sikkim, at elevations of from 6,000 to 10,000 feet, collected by Kurz, Gamble, Lister, King.

This species falls into the section with *I. insignis*, *dipyrena*, and *odorata*. It is the plant referred to by Sir J. D. Hooker in the *Flora of British India*, Vol. I, p. 599, as a possible new species near *odorata*, of which, when working up the genus *Ilex* for that work, he had seen only a single imperfect specimen collected in Sikkim by Mr. Brandis.